

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:) Confirmation No. 5781
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KOYAMA et al) Group Art Unit: 1794
)
Serial No.: 10/535,242) Examiner: Chevalier, Alicia Ann
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Filed: May 18, 2005)
)
For: FINGERPRINT EASILY ERASABLE FILM)

COMMISSIONER FOR PATENTS
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RESPONSE TO FINAL ACTION UNDER 37 CFR 1.116

Sir:

The remarks which follow are in response to the final action of August 17, 2009.

In applicants' previous response attorney for applicants argued that it would not have been obvious to substitute a material having "a wet tension of 25 mN/m or higher", disclosed by Takahashi et al, for the low wet tension material of Amimori. That argument attacks the combination/substitution and is not "attacking references individually", as suggested by the Examiner at page 5 of the final rejection. More specifically, remarks directing the Examiner's attention to teachings in the primary reference which would lead away from the allegedly obvious combination/modification are not "attacking the references individually."

In applicants' previous response, in the paragraph bridging pages 4 and 5, applicants' argued:

"Amimori et al teach away from such a substitution in their teaching of a preference for use of a fluoropolymer for the low refractive index layer, i.e. a preference for a material with a very low wet tension."

In response, the Examiner writes: "First, Applicant has not provided any evidence that Amimori's surface tension is 'very low' or what constitutes 'very low'." That

fluorocarbon polymers are hydrophobic (water repellent), meaning that they show a very low wet (surface) tension, is well known and there should not be any burden on applicants to establish that which is well known. Nevertheless, submitted herewith (attachment #1) is a printout from www.fibre2fashion.com which reads:

"Fluorocarbons are organic compounds consisting [of] perfluorinated carbon chain. They tend to decrease the surface tension of the substrate. Fluorocarbons generally lower the surface tensions by forming a thin film of coating around the fiber. They usually are cationic in nature but can also be non-ionic and anionic. Some useful fluorocarbons are perfluoroalkyl acrylate copolymers and their fundamental structure resembles that of acrylic resins. **The surface tension of the fluorocarbon water repellent agent is extremely small, about 10 dyne/cm.** Therefore, water repellency can be attained and a water drop does not adhere on the treated cotton fiber. Industry started using water repellents based on paraffin, silicone and fluorocarbons. Comparing the three systems, it was found that those belonging to the paraffin type have low water repellent effect at the initial stage and no durability to washing. Those of the silicone type were better than the paraffin-based products but were poor oil repellents. The fluorocarbon-based products were found to endow excellent oil and water repellency." [Emphasis added]

10 dyne/cm equals 10 mN/m. See the attached "surface Tension Converter" "attachment #2."

As the Examiner recognizes, a prima facie case for obviousness requires a logical reason for combining the reference teachings. In this connection, in the earlier office action dated February 27, 2009, the Examiner gave a reason based on an erroneous interpretation of the data of Table 2 of Takahashi. The Examiner interpreted Table 2 of Takahashi as teaching "that if the wet tension is below 20 mN/m (comparative examples) the coating does not resist fingerprints," quoting from page 3 of the office action of February 27, 2009. Based on that interpretation, the Examiner concluded:

"It would have been obvious to one of ordinary skill in the art at the time of the invention to make Amimori's surface with wet tension of 25 mN/m or higher **as disclosed by Takahashi in order to make the Amimori's film resistant to fingerprint stains.**" [Emphasis added]

As applicants noted in response, Takahashi teaches a correlation between ease of removal of fingerprints and the presence of silica particles in the coating film (column 6, lines 15-23), but not between ease of removal of fingerprints and high wet tension as had been supposed by the Examiner. In other words, Takahashi attributes ease of fingerprint removal to the presence of silica in the composition. Further, in Table 1 of Takahashi comparative examples 1 and 4 were the only examples of compositions not containing particulate silica D-1 and were the only two compositions which showed "clear fingerprints" rated "X". See column 12 and Table 2. Attorney for applicants also noted that, if the Examiner's interpretation was correct, then comparative example 4 with a critical surface tension of 25, should have given better results for fingerprint removal than examples 5, 6 and 7 and comparative examples 2 and 3, all of which had lower values for critical surface tension. However, the product of comparative example 4 failed the fingerprint removal test, whereas the samples of the aforementioned five examples, with lower surface tension, passed that test.

In the final rejection, the Examiner appears to accept the foregoing argument where she writes:

"Furthermore, even if Takahashi does not suggest any correlation between a high wet tension (surface tension) and ease of removal of fingerprints, the fact remains that Takahashi does the having [sic., have] a coating with a wet tension of 25 mN/m or higher which makes the coating resistant to fingerprint stains."

However, if the Examiner concedes lack of the correlation in Takahashi between high wet tension and ease of fingerprint removal, the Examiner's previously stated reason for the reference combination is lost. What now is the reason for the combination? The mere fact that certain embodiments of Takahashi do have high critical surface tension and ease of fingerprint removal exist is not a reason for substitution of a high wet tension material in Amimori et al, especially given (1) the above-noted teachings and data of Takahashi which evidence that the high wet tension is due to the presence of the silica and independent of surface tension and (2) the above-noted teachings of Amimori et al stating a preference for very low wet tension material.